Page 5, delete first full paragraph and insert the following paragraph:

Further, Japanese Patent Unexamined Publication No. sho. 64-27953 discloses a plate-making method which comprises recording an image of an oleophilic wax ink on a hydrophilic plate material by an ink jet process. In this method, since the image is formed of a wax, the resulting image area has a reduced mechanical strength and the adhesion of the image area to the hydrophilic surface of the plate material is insufficient, reducing the press life.

Page 24, delete the paragraph bridging pages 24 and 25 and insert the following paragraph:

The printing apparatus 1 also has an ink jet recording device (ink jet image depicting device) 2 which ejects an oil-based ink onto the plate material 9 mounted on the plate cylinder 11 in accordance with image data transmitted from an image data calculation controlling unit 21, to thereby form an image on the plate material.

Page 27, delete the first full paragraph and insert the following paragraph:

The image data calculation controlling unit 21 receives image data from, e.g., an image scanner, a magnetic disk device or an image data communication device, and not only carries out color separation but also processing of the separated data into appropriate numbers of pixels and gradations. In addition to these operations, the controlling unit 21 calculates dot position and dot area percentage in order to enable the recording of oil-based ink images in halftone dots by means of an ejection head 22 as recording head (see Fig. 2 explained in detail hereinafter) with which the ink jet recording device 2 is equipped.

Page 27, delete the second full paragraph and insert the following paragraph:

B5

Furthermore, as described below, the image data calculation controlling unit 21 controls the movement of the ink jet ejection head 22 and the time at which the oil-based ink is ejected and, if desired, the timing of the rotation of the plate cylinder 11, the blanket cylinder 12, the impression cylinder 13, etc.

Page 28, delete the paragraph bridging pages 27 and 28 and insert the following paragraph:

B6

The plate material 9 is first mounted on the plate cylinder 11 using the automatic plate material supplying device 7. The plate material is brought into close contact with and fixed firmly to the plate cylinder by means of a well-known mechanical device such as a plate top/tail gripping device or an air suction device, or by a well-known electrostatic device. Due to this firm fixation, the tail end of the plate material 9 is prevented from flapping against, and bringing into contact with and thus damaging the ink jet recording device 2 during the recording process. Also, it is possible to prevent the plate material 9 from being brought into contact with the ink jet recording device by using an arrangement which brings the plate material into close contact with the plate cylinder only in the neighborhood of the recording position of the ink jet recording device at least during recording the image. Specifically, the arrangement may be, for example, hold-down rollers disposed on both upstream and downstream sides of the recording position of the plate cylinder. Further, an arrangement may be provided such that the end of the plate material is kept away from the ink supplying roller at fixing the plate material, making it possible

B6 (concluded)

to inhibit stain on the surface of the printing plate and hence reduce the number of sheets of waste paper. Specifically, hold-down rollers, guides, electrostatic attraction, etc. are effective.

Page 34, delete the paragraph bridging pages 34 and 35 and insert the following paragraph:

B7

The image data calculation controlling unit 21, as described above, not only performs calculation operations on input image data and controls movement of the ejection head with the ejection head approaching and separating device 31 or the head subsidiary scanner 32 and rotation of the plate cylinder, but also receives a timing pulse from an encoder 30 attached to the plate cylinder and carries out operation of the ejection head in accordance with the timing pulse. As a result, positional precision in the direction of subsidiary scanning is improved. During the image recording by the ink jet recording device, the use of a driving unit having a high precision different from the driving unit for printing allows the plate cylinder to be driven in an enhanced positional precision in the direction of subsidiary scanning. During this procedure, the plate cylinder is preferably released mechanically from the blanket cylinder, the impression cylinder and others so that only the plate cylinder can be driven. More specifically, the output from a high precision motor can be subjected to reduction through a high precision gear, steel band or the like to drive only the plate cylinder. During the recording of a high quality image, these devices may be used singly or in combination.

Page 42, delete the paragraph covering pages 40 - 42 and insert the following paragraph:

The main body 41 of the head has a plurality of ink grooves 43 perpendicularly to the edge thereof for the purpose of ink circulation. The grooves 43 each may have any shape so far as the grooves can provide a suitable capillary action sufficient to form a uniform ink flow. However, it is especially desirable that the width of the groove is from 10 to 200 μm and the depth thereof is from 10 to 300 μm. Ejection electrodes 22b are provided in respective ones of the grooves 43. The ejection electrode 22b may be arranged so as to cover the entire surface of the ink groove 43 or it may be formed on only a portion of the groove using a conductive material such as aluminum, nickel, chromium, gold or platinum, according to a well-known method as described in the above-described example of the device. Additionally, the ejection electrodes are electrically isolated from one another. Two ink grooves adjacent to each other form one cell, and a separator wall 44 positioned in the center of the cell has an ejector 45 or 45' in the tip. The separator wall 44 is made thinner in the ejector 45 or 45' than in other portions thereof, and the ejector is sharpened. The main body of the head is formed by the configuration method such as mechanical processing or etching of a block of insulator material, or molding of an insulator material. It is desirable that the separator wall in the ejector has a thickness of from 5 to 100 μm and the sharpened tip thereof have a radius of curvature of from 5 to 50 μm. Further, the tip of the ejector may be slightly cut off as shown in the ejector 45'. In the figure, only two cells are recorded for ease of illustration. A separator wall 46 is disposed between cells. The tip 47 of the wall 46 is cut off so as to be set back compared with the ejectors 45 and

45'. The ink is flowed into the ejection head via ink grooves from the direction indicated by an arrow I with from an ink supplying device (not shown), and thereby supplied to the ejectors. Further, the excess ink is recovered in the direction indicated by an arrow O with an ink recoverer (not shown). As a result, fresh ink is always supplied to each ejector. A plate cylinder holding a plate material on the surface thereof (not shown) is arranged so as to face the ejector. While maintaining such a condition, a voltage corresponding to the image information is applied to the ejection electrode, and ink is ejected from the ejector to form an image on the plate material.

B8 (concluded)

Page 49, delete the first full paragraph and insert the following paragraph:

The embodiment of implication of the on-press recording type multi-color lithographic printing apparatus according to the present invention has been described with reference to an example of sheet-feed press. In the case where the present invention is implicated as an on-press recording type multi-color web (paper roll) lithographic printing machine, on the other hand, the foregoing unit type or common impression cylinder type printing machine can be used to advantage. In the case where the present invention is implicated as an on-press recording type multi-color web double-sided printing machine, both the unit type and common impression cylinder type printing machine can be realized by arranging a plurality of structures each having a known web inverting device provided in at least one gap between adjacent impression cylinders such that printing is effected on both surfaces of printing paper P. Most preferred among on-press recording type multi-color web double-sided printing apparatus is BB (blanket-to-blanket) type printing machine. This type of printing machine comprises one plate cylinder

B9

and blanket cylinder (no impression cylinder) for one color to be printed on one surface of web and one plate cylinder and blanket cylinder (no impression cylinder) for the same color to be printed on the other surface of web, said blanket cylinders being pressed against each other during printing. This structure is provided in an amount corresponding to the number of colors to be printed. Web passes through the gap between the blanket cylinders which are pressed against each other during printing to perform multi-color double-sided printing.

B9 (concluded)

Page 53, delete the paragraph bridging pages 53 and 54 and insert the following paragraph:

The plate material 9 is first mounted on the drum 11 by using the automatic plate material supplying device 7. At this time, the plate material 9 is brought into close contact with and fixed on the drum 11 by a well-known mechanical method such as a plate top/tail gripping device, an air suction device, etc., or a well-known electrostatic method, etc. Therefore, the tail end of the plate material 9 is prevented from flapping against, and bringing into contact with and thus damaging the ink jet recording device 2 during the process of recording the image thereon. Also, it is possible to prevent the plate material 9 from being brought into contact with the ink jet recording device 2 by using an arrangement which brings the plate material 9 into close contact with the drum 11 only in the neighborhood of the recording position of the ink jet recording device 2 at least during recording the image. In detail, for example, the arrangement may be hold-down rollers disposed on both upstream and downstream sides of the recording position on the drum 11. When not recording an image, it is preferable that the head is kept apart from the

B10

B10 (concluded)

plate materials, whereby it is possible to effectively prevent the plate materials from being brought into contact with the ink jet recording device 2 and being thereby damaged.

Page 54, delete the first full paragraph and insert the following paragraph:

B11

The image data calculation controlling unit 21 receives image data from an image scanner, a magnetic disk unit, an image data transmission device, etc., decomposes the colors as necessary, and simultaneously calculates to divide the decomposed image into an adequate number of pixels and graduations. Further, it calculates the dot area percentage in order to dot an oil-based ink image or to make the same into half tone by using an ink jet ejection head 22 (See Fig. 3, described in detail later) that the ink jet recording device 2 has. In addition, as described later, the image data calculation controlling unit 21 controls movement of the ink jet ejection head 22 and ejection timing of oil-based ink, and simultaneously, controls the operation timing of the drum 11, etc., as necessary.

Page 66, delete the first full paragraph and insert the following paragraph:

B12

An ink jet printing apparatus (hereinafter called a "printing apparatus") shown in Fig. 14 is composed of a supplying roll 101 of a roll-shaped printing medium, a dust and paper dust removing device 102, a recording device 103, an opposed (image-recording) drum disposed at a position opposed to the recording device 103 and a printing medium, a fixing device 105 and a printing medium winding roll 106.

Page 81, delete the first full paragraph and insert the following paragraph:

Preferred examples of the nonaqueous solvent having an inherent electrical resistance of 10^9 Ω-cm or more and a dielectric constant of 3.5 or less include straight-chain or branched aliphatic hydrocarbons, alicyclic hydrocarbons, aromatic hydrocarbons and halogenated products of these hydrocarbons. Specific examples thereof include hexane, heptane, octane, isooctane, decane, isodecane, decaline, nonane, dodecane, isododecane, cyclohexane, cyclooctane, cyclodecane, benzene, toluene, xylene, mesitylene, Isopar C, Isopar E, Isopar G, Isopar H and Isopar L ([Isopar] ISOPAR: tradename, a product of Exxon Corp.), Shellsol 70 and Shellsol 71 ([Shellsol] SHELLSOL: tradename, product of Shell Oil Corp.), Amsco OMS and Amsco 460 Solvent ([Amsco] AMSCO: tradename, product of American Mineral Spirits Corp.), and silicone oils. They can be used singly or as a mixture of two or more thereof. As to the nonaqueous solvent, the upper limit of the inherent electrical resistance value is of the order of 10^{16} Ω-cm, and the lower limit of the dielectric constant value is about 1.9.

Page 98, delete the paragraph bridging pages 97 and 98 and insert the following paragraph:

A circulation pump was used as a stirring means, and a multi-channel head of 256 channels, which is a 100dpi as has been typed in Fig. 5, Fig. 7 or Fig. 9, is disposed. A pump is used, an ink reservoir is, respectively, provided at an ink flow course between the pump and the ejection head, and between the ink recovery course of the ejection head and the ink tank. Then, ink is circulated by a difference in the static pressure between these courses. A heater and the above-described pump are used as a means for controlling an ink temperature, wherein the ink

temperature is set to 35°C and is controlled by a thermostat. Herein, the circulation pump was also used as an stirring means for preventing precipitation and aggregation. In addition, a conductivity measuring device is disposed in the ink flow course, wherein the concentration of ink is controlled by diluting the ink or concentrating the same on the basis of the signals outputted from the conductivity measuring device. As a plate material, the above-described aluminum plate was mounted on the plate cylinder of a lithographic printing apparatus. After dust on the surface of the plate material is removed by a nylon-made rotary brush, data of an image to be printed are transmitted to the image data calculation controlling unit, and the image is recorded by a full-line head while rotating the plate cylinder. Oil-based ink is ejected onto the aluminum plate to form the image. Any defective image due to dust cannot be found, and the image can be prevented from deteriorating due to changes in the dot diameters even by changes of the outer temperature and/or an increase in the number of plates made, wherein satisfactory plate making can be achieved. Subsequently, the image is fixed by a heated roller (made by HITACHI KINZOKU, and its consumption power is 1.2kw), is strengthened, and is made into a printing plate.

B14 (concluded)

Page 99, delete the first full paragraph and insert the following paragraph:

A 50 (dpi) 128-channel multiple channel head as shown in Fig. 7 was mounted as an ejection head on the ink jet recording device of an on-press recording type four-color single-sided lithographic printing apparatus (see Fig. 10). Using a contact roller made of TEFLON, the gap was adjusted to 0.8mm. 5,000 sheets of printing plates were then prepared in the same manner as in Example 1 except that the ink tank was replenished with a concentrated ink

B15